HIGHER TECHNICAL INSTITUTE

ELECTRICAL ENGINEERING DEPARTMENT

DIPLOMA PROJECT

DESIGN OF THE ELECTRICAL SERVICES OF A LUXURY HOUSE

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### HIGHER TECHNICAL INSTITUTE

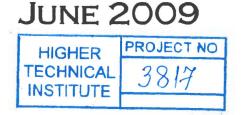
## DIPLOMA PROJECT

## ELECTRICAL ENGINEERING DEPARTMENT

# DESIGN OF THE ELECTRICAL SERVICES OF A LUXURY HOUSE

## **ALEXANDROS ALEXANDROU**

**SUPERVISOR: Mr. John Demetriou** 



## DEDICATED:

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## TO ALL THE PEOPLE WHO HELPED ME TO COMPLETE THE ELECTRICAL ENGINEERING COURSE IN HIGHER TECHNICAL INSTITUTE.

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### 1.1 CHAPTER INFORMATIONS

THIS PROJECT IS DEALING WITH THE ELECTRICAL SERVICES DESIGN OF A LUXURY HOUSE. IN EACH CHAPTER OF THIS PROJECT, A CALCULATION OF AN EXAMPLE IS MADE AND THE REST RESULTS ARE SHOWN WITH TABLES. IN ORDER FOR THE READER TO UNDERSTAND THE CALCULATIONS, THE PROJECT TRAVELS BACK TO THE APPENDICES.

- CHAPTER 2 DEALS WITH THE ILLUMINATION DESIGN. THE NUMBER OF LUMINARIES NEEDED (INCLUDING THE POWER OF EACH ONE) FOR EACH ROOM OF THE BUILDING.
- CHAPTER 3 DEALS WITH THE LIGHTING CIRCUITS AND IT IS BASED ON THE CALCULATIONS OF CHAPTER 2 THE SIZES OF THE WIRES AND CONDUITS ARE CALCULATED. AT THE DRAWINGS (FOUND ON THE BACK OF THE PROJECT) WE CAN SEE THE POSITION OF THE LUMINARIES AND THE WAY OF CONNECTION.
- CHAPTER 4 DEALS WITH THE SOCKET OUTLETS. THE SIZES OF THE WIRES AND CONDUITS ARE CALCULATED. THE POSITION OF EACH SOCKET OUTLET IS SHOWN BY DRAWINGS WHICH CAN BE FOUND ON THE BACK OF THE PROJECT.
- CHAPTER 5 DEALS WITH THE AIR CONDITIONING. THE SIZE OF THE AIR CONDITION, WIRE AND CONDUITS ARE CALCULATED FOR EACH ROOM. THE POSITION OF EACH STORAGE HEATER IS SHOWN BY DRAWINGS. (DRAWING CAN BE FOUND ON THE BACK OF THE PROJECT)
- CHAPTER 6 DEALS WITH THE FIXED APPLIANCES OF THE BUILDING. THE WIRE AND CONDUIT SIZES OF THE COOKER UNIT, REFRIGERATOR, WASHING MACHINE, DISH WASHER AND WATER HEATER ARE CALCULATED. .(DRAWING CAN BE FOUND ON THE BACK OF THE PROJECT)

- CHAPTER 7 DEALS WITH THE FIRE ALARM. THE WAY THAT THE FIRE ALARM WORKS, THE BLOCK DIAGRAM OF THE ALARM INSTALLATION AND THE TYPE OF THE SYSTEM.(DRAWING CAN BE FOUND ON THE BACK OF THE PROJECT)
- CHAPTER 8 DEALS WITH THE BURGLAR ALARM OF THE BUILDING, THE BLOCK DIAGRAM OF THE ALARM AND THE WAY ITS CONNECTED. (DRAWINGS CAN BE FOUND ON THE BACK OF THE PROJECT)
- CHAPTER 9 DEALS WITH THE TELECOMMUNICATION SERVICES OF THE BUILDING. THE CONNECTION OF EACH TELEPHONE LINE IN THE TELEPHONE DISTRIBUTION CASE, THE SIZE OF THE TELEPHONE DISTRIBUTION CASE WIRES AND CONDUITS ARE ALL SHOWN. THE POSITION OF EACH TELEPHONE POINT IS SHOWN BY DRAWINGS.
- CHAPTER 10 DEALS WITH THE TELEVISION INSTALLATION OF THE BUILDING AND HOW IT WORKS. THE CONNECTION IS SHOWN IN THE BLOCK DIAGRAM. (DRAWINGS CAN BE FOUND ON THE BACK OF THE PROJECT)
- CHAPTER 11 DEALS WITH THE SWIMMING POOL MOTOR AND THE ELECTRIC GATES INSTALLATION
- CHAPTER 12 DEALS WITH THE DIVERSITY OF THE BUILDING. THE SIZES OF THE MAIN FUSE AND THE DISTRIBUTION BOARDS ARE CALCULATED. ALSO THE SIZE OF THE MAIN CABLE SUPPLY IS CALCULATED. THE POSITIONS OF THE POINTS ARE SHOWN BY DRAWINGS.
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- > My classmates
- > My girlfriend

BECAUSE THEIR CONTRIBUTION HELPED ME TO COMPLETE THE ELECTRICAL ENGINEERING COURSE AND TAKE MY DIPLOMA.

#### SUMMARY

The purpose of the electrical installation project of electrical services in a luxury house must be carried out with responsibility in order to provide safety and luxury to the people.

The electrical design of the building is carried out according to IEE wiring regulations 16<sup>th</sup> edition in coordinate with C.Y.T.A and E.A.C regulations.

The design of the electrical services of the building is explained in detail in this book. The book has been divided into different chapters. The contents of each chapter are given at the front pages. At the end of the book, some appendices are attached and in each one of the appendices are tables and manufacturers data used in the design for each appendix.